

REMARKS

In the Advisory Action, the Examiner apparently objected to the term "entire" that was added in response to the last office action and accordingly that term has been eliminated.

Based on our reading of the Advisory action, it appears that the Examiner is maintaining the rejection due to an interpretation that the resin film 2 may not be permanently attached because the Ogawa reference does not expressly or repeatedly reiterate that fact. However, it is respectfully submitted that the clear intention of Ogawa is to provide a strong permanent resin member that is arranged to support the die. See, e.g., Col. 2, lines 34-37. In this passage, Ogawa states that: "improvement in the adhesive force between the resin member and the metal member is of paramount importance to the operational reliability of the semiconductor package." This statement only makes sense if it is contemplated that the resin member will be attached to the lead frame during the operation of the device. The combination being relied upon by the Examiner contemplates the removal of the resin member. Accordingly, it is respectfully submitted that the proposed combination is not appropriate because it defeats the primary purpose of the primary reference. Accordingly, it is respectfully submitted that those of ordinary skill in the art would not in any way be motivated to make the alleged combination and that the outstanding rejection should be withdrawn for at least this reason.

In the Advisory action the Examiner points out that after Col. 5, lines 12-14 there is no mention of the permanent adherence of the resin to the lead frame. Although this point is acknowledged, the passage points out that the lead frame has been completed (with the resin film being joined thereto) and given the clear intention of the application, there is no need to mention how the lead frame is used since those skilled in the art would clearly understand that it is intended that the resin film remain affixed to the lead frame.

This argument was presented in more detail in the previous response and is repeated below. The outstanding rejection utilizes Ogawa as the primary reference. Ogawa is directed at the fabrication of a lead frame having a support member (2, 8) that is secured to the bottom surface of the lead frame 1. The support member serves as a support for the die 4 when the lead frame is eventually used in a package. In the embodiment illustrated in Figs. 1 and 3, the support member is resin film or plate 2 (e.g. polyimide). In the embodiment illustrated in Fig. 4, the support is a metal plate 8. The outstanding rejection appears to take the position that the support is a temporary structure that may be removed. (Although it is acknowledged in the Office Action that the Ogawa reference itself does not disclose the removal of the support structure). The outstanding rejection then relies on Melton to teach the step of removing a temporary support. It is respectfully submitted that this combination of Ogawa and Melton is inappropriate

because the support structure disclosed by Ogawa is intended to be a permanent structure and its removal would completely defeat the purpose of Ogawa reference. Accordingly, it is respectfully submitted that those familiar with the art would not have been motivated to make the combination asserted in the outstanding rejection.

The background section of the Ogawa reference sets up the problem well. At the time of Ogawa, there were a class of packages which eliminated the die attach pad portion of the lead frame. The particular class of packages that is relevant to the Ogawa reference would substitute a carrier (i.e., support member) that was permanently adhered to the lead frame. The support member would serve to support the die during wire bonding and then would become part of the completed package. Note, it is believed by the undersigned that in some package designs, this support was intended to be exposed at the bottom surface of the package while the die and leads were NOT intended to be exposed on the bottom surface of the package. The problem that Ogawa sought to solve was that sometimes moisture could penetrate between the lead frame and the plastic packaging in the final product (package). See, e.g., Col. 2 lines 15-37 with particular lines 34-37 which state the objective of the Ogawa reference as follows:

Therefore, improvement in the adhesive force between the resin member [i.e., the support] and the metal member is of paramount importance on the operational reliability of the semiconductor package. (emphasis ours)

It is respectfully submitted that the background makes clear that Ogawa contemplated that the support (whether that be resin or metallic) would be used in the final package. It is also respectfully submitted that given the state of the art at the time, those of ordinary skill in the art would have understood Ogawa to be referring to a permanent structure even if it had not been specifically mentioned in the background. Therefore, it is respectfully submitted that the combination asserted in the outstanding rejection (i.e., the removal of the support member taught by Ogawa) would entirely defeat the purpose of the Ogawa reference. It is well established that a combination of references is inappropriate if the proposed combination defeats the purpose of the primary reference. Accordingly, it is respectfully submitted that the outstanding rejection should be withdrawn for at least this reason.

In earlier office actions, both the Melton and Djennas references were utilized as a primary reference in a rejection and the differences between the claimed invention and both of these references were discussed in some detail in the amendment filed October 10th, 2005. Accordingly, since those references are used only as secondary references in the outstanding rejections, those distinctions will not be repeated herein. However, it is noted that given that the support structure described in the Ogawa reference was specifically intended to be a permanent structure, it is respectfully submitted that nothing in the secondary Melton or Djennas references

would have motivated those of ordinary skill in the art to make the combination proposed in the outstanding rejection. Accordingly, it is respectfully submitted that the present claims are patentable over the art of record for at least this reason as well.

Separately, independent claims 1 and 7 have been amended to make it clear that the adhesive tape covers the entire lower surface of the lead frame (i.e., the lower surface of the leads).

Concurrent Proceedings

In the outstanding rejection, the Examiner included a reminder about the duty to inform the Office of any prior or concurrent proceedings relating to the patent that is currently in reissue. The undersigned is unaware of any concurrent proceedings regarding the '710 patent. However, we recently filed a concurrent reissue application for the parent application (U.S. Patent No. 5,894,108). The reissue application was filed on October 4, 2005 and bears the Serial No. 11/244,409.

Objection to the claims

Claims 2 and 3 were objected to as not further limiting amended claim 1. Claim 3 has been canceled. Claim 2 requires that each of the bond pads on the die are electrically connected on a selected one of the plurality of leads. It is believed that this further limits claim 1 which does not require that all of the bond pads be electrically connected to associated leads.

Conclusion

In view of the foregoing, it is respectfully submitted that all pending claims are patentable over the art of record and that this case is in condition for allowance. Should the Examiner have any remaining concerns regarding the present application, he is encouraged to contact the undersigned at the telephone number set out below.

Respectfully submitted,
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